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Fear of Obama: An empirical study of the demand for guns and the U.S. 2008 presidential election☆

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ABSTRACT

Using monthly data constructed from futures markets on presidential election outcomes and a novel proxy for firearm purchases, this paper analyzes the response of the demand for guns to the likelihood of Barack Obama being elected in 2008. Point estimate suggests the existence of a large Obama effect on the demand for guns. This political effect is larger than the effect associated with the worsening economic conditions. This paper presents robust empirical evidence supporting the hypothesis that the unprecedented increase in the demand for guns was partially driven by fears of a future Obama gun-control policy. Conversely, the evidence for a racial prejudice motivation is less conclusive. Furthermore, this paper argues that the Obama effect did not represent a short-lived intertemporal substitution effect, and that it permanently affected the stock of guns in circulation. Finally, states that had the largest increases in the demand for guns during the 2008 election race experienced significant changes in certain categories of crime relative to other states following Obama's election. In particular, those states were 20% more likely to experience a shooting event where at least three people were killed.

1. Introduction

During 2008 and early-2009, the United States media reported on skyrocketing sales of firearms as well as shortages in common types of handgun ammunition (see, for example, Johnson (2008), Bohn (2008), and NPR (2009)). The increase in gun sales was measurably large: federal tax receipts from the sales of pistols and revolvers increased by almost 90% during the fourth quarter of 2008 compared to the same quarter a year earlier.[1] Some states experienced substantial increases in the number of applications for permits for carrying concealed weapons.[2] Even though this nationwide gun phenomenon was especially evident in the weeks following the election of Barack Obama as president, gun sales had already begun to spike prior to Election Day. In some parts of the United States gun purchases reached unprecedented peaks in July and September of 2008, the months following Hillary Clinton's concession speech and the Democratic Convention, respectively. In December 2008, by which time firearm sales were soaring, President-elect Obama urged gun owners "not rush out and stock up on guns" (Pallasch, 2008).

Although the concurrent timing of growing gun sales and permit applications with the 2008 U.S. presidential election is suggestive of an effect of Obama's election on the demand for guns, these correlations could also arise from other confounding factors, such as worsening economic conditions or a more general election effect. In this paper I quantify how the anticipation and realization of Obama's success in the presidential election affected the demand for guns. Using data constructed from futures markets on presidential election outcomes and a novel proxy for firearm purchases (i.e: FBI's firearm background check reports), I show how the demand for guns responded to monthly information concerning the likelihood that Obama would be elected. After controlling for state fixed effects, different time fixed effect specifications, and state level-time varying covariates accounting for the economic climate, my point estimate provides strong evidence for the existence of a large "Obama effect:" According to my most conservative specification, a 10-point increase in the probability of Obama being elected is associated with a 4.5% increase in the demand for guns nationwide. Moreover, this political effect is larger than the effect associated with worsening economic conditions.

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[1] This figure is double the highest growth rates for 1993–1994 when both the Brady Handgun Violence Prevention Act and the Federal Assault Weapons Ban were introduced (arguably two of the most important gun control laws since the Gun Control Act of 1968 signed by Lyndon Johnson), and more than doubles the panic buying that took place during the aftermath of the 9/11 terrorist attacks.

[2] See the Discussion section for further analysis.

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Why would the election of Barack Obama have affected the demand for guns? I examine two potential underlying mechanisms by exploiting monthly variation in the odds of an Obama victory interacted with cross-sectional variation in a set of relevant state characteristics. First, a common explanation for the gun sales surge is the perception and fear that the election of Obama would lead to stronger legal restrictions on gun ownership and their use in the near future (see, for example, Johnson (2008), and Neary (2009)). I refer to this potential mechanism as the "fear of gun control" hypothesis and exploit heterogeneity in gun laws to evaluate its validity. While there is an important federal component to gun regulations, most gun control policy in the United States is decentralized. As a result, there exist substantial cross-state differences in the degree of gun law strictness in terms of the regulation of the sale, possession, and use of firearms. My identification strategy assumes forward looking agents and presumes that the potential enactment of a more restrictive federal gun control legislation was expected to be binding on those states with weak gun control and thus could trigger a surge in gun sales.[3] Consistent with the "fear of gun control" hypothesis, I find that the effect of the Obama election on the demand for guns was much larger in states with weaker gun laws.

I also evaluate racial prejudice as another potential mechanism, what I refer here as the "race bias" hypothesis. Although some social scientists have argued that the election of Obama is the prima facie evidence that race no longer matters in American politics, empirical work analyzing Obama's performance during the 2008 election shows mixed results (e.g., Mas and Moretti, 2009; Hutchings, 2009; Enos, 2010; Stephens-Davidowitz, 2014). Sears and Tesler (2010) argue in fact that the 2008 presidential campaign was "the most sharply racialized campaign" of the last two decades, given the extent to which public opinion was "polarized by racial attitudes." It is conceivable therefore that for some individuals the election of the United States' first African-American president was viewed as a personal threat (see, for example, Huppke (2009), and U.S. Department of Homeland Security (2009)). Nonetheless, the empirical evidence toward the "race bias" hypothesis is less conclusive. Although the Obama effect appears to be larger in states with higher levels of prejudice against blacks, this statistical result is not especially robust when including state-specific linear trends.

Why study the demand for guns? The prevalence of guns, especially handguns, is very high in the United States when compared to other developed countries.[4] Moreover, gun violence has enormous implications for mortality and morbidity.[5] Firearm-related homicide, suicide, and fatal accident rates are far higher than those in other high-income countries.[6] Furthermore, guns constitute "one of the most intensely divisive cultural issues" in the United States (Rostron, 2009). The gun debate has taken over not only the political arena but also the academia.[7] Irrespective of their stances, participants from both sides of the debate agree that guns matter. In fact, the private decision to acquire a firearm may represent an externality for the rest of society. It is still under scrutiny whether the net externality is positive (by deterring criminals and increasing society's overall safety levels) or a negative (by increasing crime, gun accidents and suicide rates). Cook and Ludwig (2000) estimate the annual social cost of gun violence at $ 100 billion. Therefore, understanding the economic and non-economic determinants of this private decision provides a valuable input for the analysis of future gun policies and their social, economic, and political ramifications. I exploit a unique historical event to shed light on the determinants of the demand for guns. I argue that the Obama effect did not represent a short-lived intertemporal substitution effect and document that the stock of guns in circulation permanently increased. Additionally, states that experienced the largest increases in the demand for guns during the 2008 election race experienced significant changes in some categories of crime relative to other states following Obama's election. In particular, those states were 20% more likely to experience a shooting event where at least three people were killed.

My work contributes to the empirical literature on the effects of both the realization and anticipation of political events, such as the passage of a new law or the election of a candidate, on different economic outcomes.[8] More specifically, it advances the empirical and theoretical work done on consumers' behavior in anticipation of *future* gun policies in two respects.[9] Firstly, it provides empirical evidence consistent with stockpiling behavior as a reaction to expected future increases in the cost of acquiring firearms. Secondly, it sidesteps previous empirical impediments due to limitations in the data. Specifically, my panel data setting has a considerably improved statistical power compared to previous work and allows me to incorporate different fixed effects in both a time and a cross sectional dimension so as to address potential omitted variable problems. Moreover, my analysis of (relative) high-frequency data for my gun purchases proxy mitigates the problem of reverse-causality from the gun market to the likelihood of a political event. Finally, by interacting the time variation to the prospect of an Obama presidency with cross-state differences in the stringency of gun control laws, my setting also helps to identify heterogeneous reactions across states that might otherwise be masked by the aggregation of the data at the national level.

My paper also relates to the empirical literature on the demand for guns and its relationship to the existing gun regulation environment. In particular, Glaeser and Glendon (1998), and Kleck and Kovandzic (2009) argue that gun-control laws in general do not appear to affect gun ownership. By studying how gun trafficking (a key element of the secondary market) across states responds to cross-state differences in gun policies, Knight (2013) finds that the necessary condition for the existence of cross-state externalities is empirically satisfied. Dube et al. (2013) shows that Mexican locations closer to those U.S. states that did not renew the Federal Assault Weapons Ban in 2004 experienced differential increases in different types of crime. In this sense, they argue that the changes in U.S. gun laws exerted a spillover on the supply of guns across U.S.–Mexican borders. Similarly, my paper argues that concerns regarding more restrictive federal gun control legislation in the future exerted a heterogeneous effect in the demand for guns which in turn differentially impacted gun-related crime.

My paper also contributes to the empirical literature on how racial attitudes may relate to the prevalence of firearms (see Kleck and Kovandzic, 2009 among others). To the best of my knowledge, my work is the first empirical study linking high-frequency gun purchases data (a flow) to racial attitudes at the state-level.

[3] There is empirical and anecdotal evidence supporting the hypothesis that consumers of durable goods are forward-looking (e.g., Chevalier and Goolsbee (2009), and Mullin (2001) for the particular case of guns).

[4] Different studies suggest that gun ownership runs as high as 35 to 40%, with as many as 300 million firearms being privately owned in the United States (See, for example, Duggan et al., 2010 for background on gun ownership).

[5] According to the Center for Disease Control and Prevention, in 2009 roughly 30,000 people died from gun-related homicides, suicides, and accidents, while about 70,000 suffered non-fatal injuries from firearm shots. By comparison, car accidents were the leading cause of injury-related deaths in 2009, causing 35,000 fatalities.

[6] When compared to 23 high-income countries, firearm-related homicide, suicide, and unintentional fatality rates in the United States are 19.5, 5.8, and 6.9 times higher, respectively (Hemenway and Richardson, 2011).

[7] Researchers in economics, political sciences, criminology, and public health have mainly focused on studying the relationships between gun prevalence and (a) crime rates, and (b) gun-related suicide and accident rates.

[8] Economic outcomes such as the stock market performance of private firms (Gyourko and Sinai, 2004; Knight, 2006), the spread between taxable and municipal securities (Greimel and Slemrod, 1999); investment decisions (Durnev, 2011), nominal interest rates (Fowler, 2006), and a variety of financial indices (Snowberg et al., 2007).

[9] Bice and Hemley (2002) estimate a supply and demand model using aggregate U.S. annual data for the period 1961–1994 and show that the demand for new handguns increased during the years of the discussion and passage of the 1968 Gun Control Act (GCA). Mullin (2001) presents a conceptual model of consumer demand for guns, wherein the impact of a buyback program on gun ownership depends on whether the program is permanent or unanticipated and never-to-be-repeated.